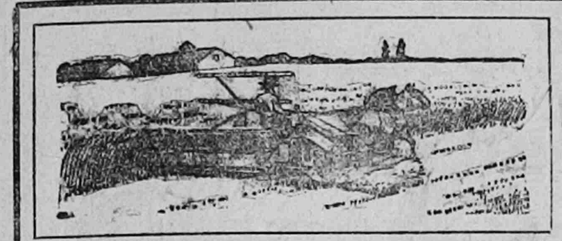


The Science of Farming

Answers by the Veterinarian

Dr. A. S. Alexander
Wisconsin College of Agriculture

Contagious Ophthalmia—Thin Horse

I HAVE a flock of 100 ewes that have had sore eyes, and one or two went blind; have lost fifty lambs that seemed too weak to live; have eighty five ones left and some of them are stuff with sore eyes. What is it and what can be done?

Have a 4-year-old horse that won't get fat; nips his sides, but looks all right otherwise. Any information will be appreciated. Thanking you in advance.—Carl Whitesell, Arrowsmith, Ill.

Reply—1. This disease is contagious and remains in an affected place for some time. Ewes and lambs should be moved onto fresh ground away from the infected area. Treat by washing affected eyes twice daily with a saturated solution of boric acid and two or three times a week puffing between eyelids with a little of a mixture of equal parts of finely powdered calomel and boric acid. Sponge eyes of lambs at birth with a 10 per cent solution of boric acid or drop in two drops of a 1 per cent solution of nitrate of silver, to be kept in a blue-colored bottle. 2. Have the horse clipped and his teeth attended to by a veterinary dentist. Feed him one quart of black strap molasses mixed with three quarts of warm water and stirred up with cut hay, bran and cornmeal. Give this night and morning with whole oats at noon and long hay at night.

Leaking Teats

How can we prevent the teats from streaming milk before milking time? The cow is near calving now and the teats are large and she is a very easy milker and healthy. She gives a big mess of milk when fresh.—G. H., Missouri.

Reply—The old-fashioned plan is to make the ends of the teats sore; but this is a poor practice as it may lead to dangerous infection of the udder. We know of no permanent cure. If any one has one would be very glad to hear from him. Mechanical measures consist in tying wide tapes around the ends of the teats or painting the ends after milking with coat upon coat of flexible collodion, which hardens and prevents escape of milk. Sometimes milking three times a day helps in such cases.

Enlarged Stifle Joints

A 4-month-old colt has two big stifle joints, and they seem to be full of fluid. The veterinary says they come from leak of joint water. This is the second colt we have had. The other one is a year old and both its stifles are large and growing bigger and the muscles below and above are wasted away. Does this trouble breed? We did not work the mare that was the mother of the 4-month-old colt, and neighbors say she should have been worked and that would have prevented the stifle swellings. Any advice you can give me about this trouble will be welcome.—G. H. T., Minnesota.

Reply—Not working the mare was not the cause of this stifle disease; nor is it hereditary. The cause is infection of the navel at birth, a subject that has been spoken of here several times of late. It will be found fully discussed in circular of information No. 13 of the agricultural experiment station of Wisconsin. This circular is entitled "Care of New-Born Foals" and may be had on application to Dean H. L. Russell, college of agriculture, Madison, Wis. The disease is easily prevented by having the mare foal in a clean place and by applying a strong solution of corrosive sublimate to the navel at birth and then twice a day until the part is perfectly healed. Cases such as you describe rarely respond satisfactorily to treatment. The affected colt usually remains a cripple for life. On dissection of affected joints we have found an ulcerated condition of the cartilage covering the ends of the bones forming the joint. Rub the enlargement with iodine ointment each other day.

Alfalfa-Growing In Kansas

By F. D. Coburn

KANSAS is unique in many things, but in none more than the commanding position she occupies in alfalfa growing. Her development in this industry is one of the marvels of her prolific agriculture, and with alfalfa as with winter wheat, no other state approaches her in its acreage and production. Those who have known it longest and best are the ones who esteem it most highly—in fact, very few who have once raised or used it as a feed are satisfied to be without it; and as a rule they contemplate an enlarged acreage and its increased use. The marvelous fact connected with this plant so old in agriculture is that it comes, as it does, to so many at the beginning of the twentieth century as an agricultural revelation.

The credulity of those who are strange to alfalfa, however fair minded, is invariably taxed by a recitation of the truth about this wonderful plant. Even the facts cut in two leave him in a perturbed state of mind as to the veracity or the sanity of the narrator, but the experiences of those who are actually its growers are convincing. An alfalfa field is a perennial and abiding blessing to those who are so fortunate as to have it, yielding annually, whether the season be wet or dry, its several cuttings of hay, unsurpassed in tonnage and quality, it is indeed esteemed as a benefaction and doubly appreciated where it flourishes and other clovers do not.

Another feature, too, that the wide-awake farmer does not overlook or minimize is the improving effects of its roots, restoring and enriching rather than depleting the fertility of his land, to the great benefit of other succeeding crops.

As is well known, alfalfa is one of the oldest forage plants, yet to the husbandry of the American farmer it is of but recent acquirement. Kansans were among the foremost to correctly estimate its worth, and its widespread introduction into the Sunflower state has been one of the most important factors in increasing bank deposits and the per capita wealth. It is noteworthy and significant that our unprecedented prosperity dates from the time alfalfa was first shown proper appreciation by our farmers. All who know alfalfa best esteem it as one of the richest acquisitions to American agriculture, and in Kansas conditions seem naturally adapted to its most abundant and economical production.

In Kansas alfalfa growing was a prelude to prosperity, and is the steadfast promoter of her progress. From obscurity it has steadily risen to the foremost rank among hay plants and has already resulted in quadrupling the state's output of tame hay. In 1890 the value of the tame hay crop was $2,000,000, while that of 1909 was considerably over $14,000,000. The annual value of products of live stock in that time has been doubled and alfalfa has made of Kansas, if not first, one of the foremost states in dairying, a most desirable branch of husbandry that intelligently and generally followed well-nigh insures continued and enlarged prosperity. Alfalfa, it seems, supplies the one requisite Providence failed to provide in establishing the otherwise ready-made conditions for dairying in Kansas, and the attention being given this branch of intensive farming in nearly every locality is having its beneficial influence commercially and socially. The widespread introduction of alfalfa in the Sunflower state has been one of the most important factors in the increase of bank deposits and the added wealth they represent. It has increased the state's manufactures through grinding the hay into meal and the preparation of various valuable stock foods, which add an important industry promising large development. The increase in its acreage here affords some, although no adequate idea of the growing appreciation in which the plant is held. It is just twenty years since the crop was first thought of enough importance to chronicle its statistics, and at that time the enumerators of the board of agriculture returned the area for the state as 34,334 acres. Now the alfalfa field of our state approximates 1,000,000 acres and but three cultivated crops exceed it in annual area—namely, wheat, corn and oats. In combination with these alfalfa furnishes Kansans in abundance with perhaps the best and cheapest rations anywhere available for the maintenance of their live stock, for the excellence of which they are famed.

Finished Steers Ready for Market

Alfalfa is pronouncedly superior to prairie hay for beef production, and the more rapid the extension of the area of land devoted to the production of alfalfa, supplanting the less valuable and lower yielding native hay, the more rapid will be the production of wealth from our soil.

The new convert and the would-be beginner who seeks light as to alfalfa is more than liable to find himself befogged by the vast amount of twaddle in catalogues, bulletins and the press, pretending to describe the superior qualities and peculiarities of the alleged numerous different varieties, and the importance of securing this one for a cold climate, that one for a dry climate and the others for certain latitudes and altitudes at prices that are preposterous. Generally speaking, most of these so-called varieties are not in the market and many of them never existed. The dealer may advertise and profess (possibly in good faith) to supply them, but the chances are that if their history was traced it would reveal that at the farther end of the line they all came from the same bin.

The fact that a man in any given locality has tried alfalfa once or twice without success signifies very little as to its adaptability there. Being unfamiliar with its habits or requirements he may have done scarcely any of the simple things needful to its prosperity. This, too, while thinking he was right and taking no little pains. His ignorance may in a single turn have been the cause of failure, or he may have gone wrong at every turn. In either event the reflection is on him rather than on the alfalfa.

In the hands of a stranger to it alfalfa that has failed after one or two attempts to raise it has not as a rule had a fair trial. Such failure should only serve to make the experimenter more determined, and no householder who has two acres of ground and keeps a horse, a cow, a pig or poultry should be satisfied without having a part of his realty in this greatest of all forage plants. Failure may come from various causes, and be the result of innocent ignorance or general inefficiency, for which the locality, soil elements or climate are in no way responsible. It might come, for example, from sowing seed adulterated or otherwise impure; seed that was reasonably pure but in some way damaged so that it was not germinable; sowing too much or too little seed; sowing at the wrong season of the year or at an unpropitious date when weather conditions proved unkind; or improper sowing upon land improperly prepared, unfortunately situated or foul with weed seeds; upon land so situated as to be too wet much of the year; on new land, the primitive wildness of which had not been subdued, or on old land robbed of its fertility and humus by long-continued cropping.

By the first enumeration of the alfalfa acreage of Kansas, in 1891, Finney county was found far in the lead by more than two one, with 5,717 acres. Her closest competitor was Kearny, the county next west, with 2,188 acres. At that time Jewell, now the leader of all, with her 11,602 acres, had but 296 acres.

One of the striking and interesting features of alfalfa history in our state has been the shifting of the locality of increase. In 1891 the west was in the lead and for the following seven years Finney county was foremost. In 1898 Butler, a southern county, obtained the lead and held it for one year, when Jewell, an extreme northern county, central from east to west, gained supremacy and has maintained it constantly, of late with no real competitor.

To illustrate the tremendous percentage of increase in alfalfa plantings in Kansas two groups, one of six northern and another of six southern counties, may be used. These, with their averages in 1891 and 1909 compared, afford striking examples. The showing for the six northern counties is as follows:

	—Acres—	
	1891.	1909.
Jewell	296	61,602
Smith	53	44,335
Phillips	111	31,779
Republic	496	31,776
Mitchell	620	26,047
Washington	206	21,459
Totals	2,042	216,998

An increase in these six counties of 10,527 per cent, the stating of which sounds like romance or fable. For the six southern counties the showing is thus:

	—Acres—	
	1891.	1909.
Sedgwick	1,023	29,528
Butler	503	38,390
Sumner	382	22,384
Cowley	416	22,016
Harper	160	12,641
Barber	694	12,560
Totals	3,179	137,519

The increase in these six southern counties of 4,226 per cent was not so large as in the six northern counties, but strikingly impressive as an object lesson.

These twelve counties combined had in 1891 5,221 acres; in 1909 they had 354,517 acres, or an increase of 6,690 per cent. They had, too, in 1909, 36 per cent of the entire alfalfa acreage of the state. Kansas had in 1909 alfalfa to the extent of 993,539 acres, or an increase of 13 per cent over 1908 and 211.3 per cent over 1901, and a gain of 2,789.6 per cent over the area of 1891. Alfalfa can be grown in every county in the state, and each county has a greater or less area of it. Seventy-seven counties showed increases in 1909 aggregating 119,661 acres, and the net gain for the year was 115,256 acres. While Jewell county has most alfalfa, Smith, its neighbor on the west, ranks second, with 44,335 acres, and Butler, to the south and further east, comes third, with 38,390 acres. Other counties having over 20,000 acres were Phillips, Republic, Sedgwick, Mitchell, Dickinson, Cloud, Sumner, Cowley, Osborne, Marion and McPherson, ranking in the order named.

The largest gains in the year were reported by Phillips and Cowley of 5,370 and 5,365 acres, respectively, followed by Sumner with an increase of 4,791 acres, Smith 4,545 acres, Finney 4,543 acres, Mitchell 4,489 acres, Harper 4,437 acres and Barber 4,314 acres.

Alfalfa is a wonderful plant, yielding under widely varying conditions well-nigh incredible growths of incomparable forage, yet some brains are a requisite of success, even in growing alfalfa. To say that "any fool can grow alfalfa" is quite misleading, but with fair treatment under fairly favorable conditions it is bringing good fortune to thousands of those growers who know it best and use a decent intelligence in their dealings with it.

Alfalfa since its advent has sold more Kansas land and at higher prices than any other one growth, commodity or influence. Lands with no sale and considered a burden at a $3 valuation have been quick sales at $40 to $75 per acre when seeded to this wonderful forage, while others, although not by any means the best, have paid their owners 10 and 12 per cent on valuations of $200 or more per acre. The cultivation and feeding of alfalfa mark the highest development of modern agriculture. Alfalfa is one of nature's precious gifts; it is the preserver and the conserver of the homestead. It does not fail from old age. It loves the sunshine, converting the sunbeams into coin in the pockets of the thrifty husbandman. It is the greatest mortgage lifter yet discovered and Kansas is its happy habitat.

Answers by the Veterinarian

Dr. A. S. Alexander
Wisconsin College of Agriculture

Moon Blindness

I WOULD like to find out what to do for a horse I have. It has been having sore eyes, matter forming inside and will keep running for a while, then stop and kind of clear up, then start to run again. I have had one go blind. Now, if it is pink eye I would like to know what to do, and if there is any cure for it—P. A. S., Iowa.

Reply—The disease is not "pink eye." That term is applied to that form of influenza (epizootic) which localizes in the membranes of the eyes when the horse is attacked by the characteristic fever and lassitude. The disease you refer to is periodic ophthalmia (moon blindness) and it is incurable and will result in blindness after successive attacks. By some it is considered contagious. There seems to be a hereditary tendency to the disease, so that affected mares and stallions should not be used for breeding. Blindness may be retarded by giving a dram of iodide of potash in drinking water night and morning at time of attack and continuing for a few days after the eyes clear up. At such times also keep the eyes covered with a soft cloth to be kept wet with a solution of half a dram each of sulphate of zinc and fluid extract of belladonna leaves in a quart of cold water.

Fistulous Withers

What is good to burn the pipes out of a thistle? I once saw a horse doctor pack long strips of cheese cloth into the discharging pipes on a horse's neck. He soaked the cloth strips in some strong medicine before using and said it would burn out the lining of the pipes and then they would heal. The horse had an awful sore neck, but after a time the matter stopped running and the place healed up. I have a case to treat, and wonder if you can tell what to use on the strips of cheese cloth, or what will do to burn the parts.—M. K., Kansas.

Reply—The veterinarian probably soaked the strips in terchloride of antimony (butter of antimony), as that is a favorite remedy for use in such cases. Or he may have used a strong solution of corrosive sublimate, formaldehyde or acid. In such cases the first necessary step is to open up the abscess thoroughly so as to obtain free drainage from every pipe and pocket. A caustic may then be used to swab the lining membrane of the cavities exposed. It is not good practice to pack caustics into an undrained abscess cavity. Such treatment sometimes may result in a cure. More often it induces spreading of the sinuses (pipes) and burrowing of pus, which may result in an incurable condition. In cases of fistula of the withers or of the poll (poll evil) it is best to have a qualified veterinarian do the necessary cutting and then follow his instructions carefully until the case no longer requires treatment. Healing by use of caustics often proves temporary and the swelling comes up again, and when pus breaks out the condition may be found worse than before.

Warts

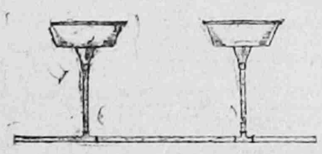
There are some big, rough growths on our heifer's back and neck, and some of them seem to be almost loose. Can they be safely cut off? A cow has a lot of hard, rough places on her udder. They do not seem like warts, but like warty skin. Can anything be done to help make the skin smooth again?—M. K., Missouri.

Reply—Twist the warts off with the fingers, or, if the fingers are not strong enough for the work, use pinchers. Touch the bleeding places with a red-hot iron, or apply Monsel's solution or powder. If the warts begin to grow again wet them with nitric acid or formaldehyde. To improve the warty condition of the skin of the udder rub it twice daily with best castor oil. This should soon remove the warts. Fresh goose grease also does fairly well in place of the castor oil.

SHORT TALKS ON HELPFUL SUBJECTS

Water Troughs For Dairy Cows

THE metal troughs in the picture can be made for $1.50 each. The basins at the top of the pipe are fastened at the side of the stall and have covers that the cow lifts with her nose when drinking. They are always



kept full but do not leak, as the water runs out through an overflow pipe. Experiments in New York showed that the milk production fell off eleven gallons in one day from twenty cows when they were watered in the ordinary way after having used the automatic basins.

Strain, Not Breed, Counts

"I HAVE bred poultry ever since I was 8 years old and have learned many things in the bitter school of experience, which, though it is a pretty expensive school, certainly gives one knowledge that no college can give," says Donald Boyce. "I have learned that it is not the breed that counts, but the strain. Here is where so many fail. They select a breed they like and the birds do not lay well; they discard it and select another. Some strains of Plymouth Rocks are bred for layers, some are not. So it is with every breed. After learning this I went to work and picked the best layers, until now I can take any breed and in a few years build up a laying strain."

Functions of Carbohydrates

THE carbohydrates of the food are chiefly starch, sugars and celluloses, and form the largest part of vegetable foods. The latter substances form the stiff framework of the stems of plants and the hulls of seeds, and are only partially digested. These carbohydrate bodies are not permanently stored in the animal body, but serve, when burnt in the system, for the production of heat and mechanical work. They are also capable, when consumed in excess of immediate requirements, of conversion into fat.

The only way to get all the happiness in life is to give for the happiness of all.

Timely Action Best

WE ARE hearing considerable complaint about damage by rabbits in orchards during the last winter. The heavy covering of snow in many sections made such injury more common than usual. Some are inquiring what is best to do now that their trees are girdled. The use of the bridge graft is perhaps the best and most efficient treatment for serious injuries of this kind. The same is described in detail elsewhere. It will probably help to save some of the girdled trees. But this is the wrong time of the year to make the best showing against the work of rabbits in orchards. It is very much like locking the barn after the horse is stolen. It is far better to so protect your trees that girdling treatment will not be needed. This can be done effectively and at small cost in the fall by the use of wire or some other kind of tree protection. There is then no danger of winter loss from rabbits. The insurance so afforded is well worth the cost. Timely action invariably pays the best.

TUBERCULOSIS EXPENSIVE

BOVINE tuberculosis, insists Dr. David Roberts of Waukesha, Wis., is costing the United States millions of dollars yearly, not through the actual death of tubercular animals, but by the tubercular animals infecting the healthy ones, thereby reducing their actual value.

If all of the tubercular cattle in the United States were slaughtered at once, the balance of the cattle would be worth more than the tubercular and healthy animals together.

It is every man's duty, in justice to himself, to determine positively that his herd is free from tuberculosis. Wiping tuberculosis out of the cattle of this country is too large a problem for a handful of people to undertake, and for this reason we will never wipe tuberculosis out of the cattle of our country until the live stock owners are given the proper information both concerning the nature of bovine tuberculosis and the tuberculin test. When this information reaches the live stock owner he will be more anxious to remove tuberculosis from his herd than any one else, owing to the fact that he is financially interested, and he and his family first of all are consumers of the products of his cattle.

Supposing those who do not believe that there is such a thing as bovine tuberculosis or a reliable tuberculin test apply this simple, harmless test to their herd, and if they find that there are animals in their herd that have reacted to the test have such animals placed in one stable and those that passed the test, indicating that they are free from tuberculosis, placed in another stable, keeping for their own use the product of the ones that have reacted and are pronounced tubercular, and put upon the market the products of those that have according to this test passed and been found free from tuberculosis.

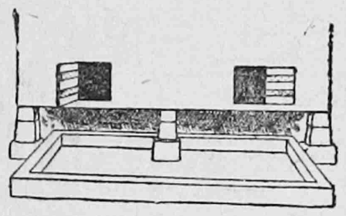
Live stock breeders, think this over carefully and be fair with yourself.

Give the Farm a Name

SENTIMENT plays an important role in the activities of man and usualy is connected with a desire for betterment. Naming a farm is purely sentiment, but the effect may be far reaching and may even go so far as to enter the field of commercialism. A farm without a name has nothing to distinguish it from its hundreds of neighbors. But give it a name, like "Woodland Place," if it contains a clump of trees, or "Meadow Brook." If by chance the place is favored with a stream of running water, and the farm assumes dignity at once. One inventive gentleman calls his property "Willida Farm," a combination of "Will," his name, and "Ida," his wife's. Many such names can be constructed and applied, many times with financial profit, as in case products like butter, eggs and garden vegetables are sold in packages on which is placed the name as a guaranty of high quality. The calling of the former needs something to give it dignity. No other occupation is more worthy of respect. Naming the farm is a good start. Try it.

Cement Manure Pit

THIS pit is constructed just outside the barn, where manure can be thrown into it from the windows. By this method all of the liquid manure is saved and can be absorbed



by any coarse material before hauling to the fields. This pit is not intended to hold all of the manure for a winter season.

Get More Corn

SHALLOW and frequent cultivation, with a liberal application of manure, together with continued selection of early maturing ears of corn for seed, has enabled farmers in northern Minnesota to produce from twenty-five to thirty bushels of Minnesota No. 2 corn per acre. This variety is known as White Cap Yellow Dent and originated at the state experiment station. To educate farmers in originating, developing and selecting their own seed grains will be the object of the good seed institutes next winter to be held in various parts of the state.

Nation of Dairymen

IN HOLLAND the land is worth from $500 to $1,000 an acre, and in many cases naturally no better than much of our Illinois land. Yet these people pay their rents or interest on the investment by producing butter and cheese which they place on the European markets in successful competition with that produced in America on land of less than one-fifth the value. They do this in spite of the fact that they cannot produce the amount of digestible nutrients per acre that we can with either corn or alfalfa.

When labor and thought are linked together in every phase of industrial life we shall have less grit in the machine and more gold in its product.—Hon. H. C. Adams.

QUESTIONS OF THE FEED LOT

By Professor Herbert W. Mumford

I WISH to secure information concerning the construction of horse barns and the securing of a suitable man to manage a horse farm. How many mares ought a stallion to serve in a season?

Professor R. C. Obrecht submits the following suggestions:

We have not published any matter relative to the construction of horse barns. The principal considerations are durability and economy of material used, light, ventilation, sanitary and convenience of arrangements. Doors and windows should be so arranged as to admit sunlight, which is destructive to germ life. Ventilators should be provided to carry off foul air at such times as when the barn is closed and full of stock. The King system is as good as any. In order to prevent overheating 1000 to 1200 cubic feet of air should be allowed per horse. If the air is not changed frequently more space is needed.

In order to construct a sanitary barn good drainage should be provided and impervious floors. Considering durability and economy of construction I think concrete is about the best material we have to use. The principal objections to it are it being hard horses are likely to break their feet from fighting flies if allowed to stand directly upon the concrete and when wet it is very slippery if troweled down smooth. The former objection may be met by keeping bedding under the horse, which will also aid the horse from slipping. In putting in the concrete I think it advisable not to trowel it down smooth, but simply level it to grade. The surface should be made of a richer mixture of cement than is necessary in the base and I prefer to use finer stone and allow them to come to the surface, not using a sand finish. My experience with floors constructed in this manner has been that they are satisfactory.

The concrete may be put down in the regular manner and covered with plank for the horses to stand upon, but I do not think it is any better than the above-described method, and is more expensive and less sanitary. The stalls should not slope more than one and one-half inches to the rear, and I prefer a covered gutter behind the horse. This should be provided with a sewer trap and drain to a cistern or cesspool.

As a floor for a foaling stall I think there is nothing better than a good clay floor. For the passageway back of the horses either brick or rough concrete is satisfactory. Where bricks are used they may be laid in the regular manner and dry sand and cement (equal parts) brushed into the cracks. When thoroughly filled dampen and the cement will bind the brick into almost an impervious floor. As helps I would advise you to get a copy of "Stable Management and Exercise," by Captain M. H. Hayes. This book is an English publication and retails at $5.00; also a copy of "Physics of Agriculture," by Professor F. H. King of Madison, Wis. This book sells for $1.75 and deals quite extensively with concrete construction, ventilation, etc.

In regard to your question as to what would be an equitable division to make with your farm manager, will say that depends so much upon the ability of your outlay, extensiveness of your equipment and local conditions that I am unable to give you anything like a definite reply. I think it a good plan in your case to make such an arrangement that your foreman will feel a responsible interest in affairs and not become negligent of duty. If he is financially interested it will likely stimulate him to hustle and carefulness in details. You should decide in your mind what you are willing under favorable conditions that your foreman should make in addition to what you are paying him in wages. As an average of favorable conditions under careful management I think you can figure on raising 60 per cent colts of the number of mares bred, though some years you may not be able to raise this many. The question then arises how many of your mares will likely produce colts that are worth more than $100 when 1 year old? The locality and the way in which the stallions are handled are factors that determine what the commission from service fees from outside mares will be. A mature stallion handled properly can serve 100 mares in a season. If the impregnator is used, several times as many can be bred.